

ABSTRACT OF THE DISCLOSURE

5 A ventilation fan assembly (10) having a fan
(22) mounted in a housing (12) and a shutter assembly
(60). The housing has a square inlet portion (12C), a
10 circular center portion (12E) and a conical outlet
portion (12D) having rifling grooves (20). The shoulder
(16) formed between the inlet portion and the center
portion is radiused to reduce disruption of air flowing
from the inlet portion to the center portion. The shape
15 of the blades (32) of the propeller (28) is such that
the axial velocity produced as the propeller rotates is
essentially constant along the length of the blades.
The shutter assembly has a large, radiused entrance and
airfoil shaped blades which reduce air disruption. The
blades have a flexible flap (68) along the trailing
edges (64D) which form a seal between adjacent blades to
prevent air from leaking from the housing through the
shutter assembly.